

PROTECTING MONTANA KIDS



BLOOD LEAD IN CHILDREN

A GUIDE FOR HEALTH CARE PROVIDERS

MONTANA DEPARTMENT OF PUBLIC HEALTH AND HUMAN SERVICES

**Lead Poisoning Prevention Program
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<http://mt.gov>**



PROTECTING MONTANA KIDS - BLOOD LEAD IN CHILDREN

3.....Introduction

4.....Requirements in Montana and Federal Law

5.....CDC Guidelines for Follow-up Testing

6.....CDC Guidelines for Case Management

7.....CDC and Medicaid Guidelines for Screening

8.....Anticipatory Guidance for Families

9.....Resources and Contacts

PROTECTING MONTANA KIDS - BLOOD LEAD IN CHILDREN

**This guide has been developed by
the Montana Department of Public Health and Human Services
Lead Poisoning Prevention Program
to provide concise and useful recommendations for screening children for blood lead
and for managing elevated blood lead levels in children.**

Although the use of lead has been reduced in recent years, lead is still found in abundance in the environment. The most commonly identified causes of elevated blood lead in children are deteriorated lead-based paint and dust and soil contaminated with lead-based paint.

Children are particularly susceptible to the effects of environmental lead because lead can accumulate in their nervous systems as they grow and develop. Even slightly elevated levels of lead in children may cause lowered intelligence, learning disabilities, behavioral problems, and poor school performance.

Approximately 310,000 U.S. children aged 1-5 years have blood lead levels considered by the Centers for Disease Control and Prevention (CDC) to be levels of concern.

The Department of Public Health and Human Services is committed to helping Montana achieve the Healthy People 2010 goal of eliminating elevated blood lead levels in children. Toward that goal, the Department has established the Lead Poisoning Prevention Program to assist local and tribal health departments, primary providers, and citizens eliminate lead poisoning in Montana's children. The goals of the program are to:

- **Assure the prompt reporting of all elevated blood lead levels in children**
- **Assure appropriate follow-up for all children with elevated blood lead levels**
- **Promote blood lead screening of all children before 72 months of age**
- **Increase public awareness of the presence and risks of lead in our environment**
- **Assure the availability of technical support and risk assessment to the health community and to private citizens**

The Lead Poisoning Prevention Program is coordinated by Jan Stetzer. Jan is a Certified Risk Assessor (Environmental Protection Agency), a registered sanitarian, and a clinical laboratory scientist. She will be happy to provide additional information, resources, and guidance for follow-up of children with elevated blood lead levels. She will also assist in the promotion of blood lead screening and will present information on lead exposure and its prevention to families or community groups. Contact her at 406-444-0695, or jstetzer@mt.gov.

REQUIREMENTS IN MONTANA AND FEDERAL LAW

MONTANA ADMINISTRATIVE RULE

Montana Administrative Rule requires that all blood lead levels of 10 µg/dl or higher in children aged 13 years or younger be reported to the Department of Public Health and Human Services. *Reference: ARM 37.114.203*

Administrative Rule also specifies specific actions to be taken by health care providers when encountering a blood lead level of 10µg/dl or higher on a child 13 years of age or less. *Reference: ARM 37.114.546*

- When the elevated blood lead level is from a capillary sample, the health care provider who ordered the capillary test must confirm the results as soon as possible by a venous draw.
- When the elevated blood lead level is from a venous sample, the health care provider must retest at intervals recommended by the federal Centers for Disease Control and Prevention (CDC), until two consecutive blood lead tests taken at least two months apart show levels of less than 10 µg/dl.

Finally, the Administrative Rule adopts CDC recommendations for blood lead testing intervals for children with elevated venous levels as published in “Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials” in November 1997. *Reference: ARM 37.114.546.*

MEDICAID SCREENING REQUIREMENTS

The U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services requires that all children receive a screening blood lead test at 12 months and 24 months of age as part of Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) service. *Reference: TITLE XIX section 1905(r) (Federal Social Security Act)*

REPORTING PROTOCOL AND PROCEDURE

Blood lead levels of 10µg/dl or higher in children should be reported to the local health department.

Local health departments should report to:

**Elton Mosher, Surveillance Specialist
1400 Broadway, Helena, MT 59620
Phone: (406)444-3165 Fax: (406)444-0308
emosher@mt.gov**

CDC GUIDELINES FOR FOLLOW-UP TESTING
“Screening Young Children for Lead Poisoning:
Guidance for State and Local Public Health Officials” November 1997

If capillary blood lead result is:	Confirm with test on venous blood sample:
10-19 µg/dl	Within 3 months
20-44 µg/dl	Within 1 week to 1 month *
45-59 µg/dl	Within 48 hours
60-69 µg/dl	Within 24 hours
70 µg/dl or higher	Immediately as an emergency lab test

*** The higher the blood lead level, the more urgent the need for confirmatory test.**

If venous blood lead result is:	Perform follow-up test
10-14 µg/dl	within 3 months
15-19 µg/dl	within 2 months
20 µg/dl or higher OR persistent 15-19 µg/dl	1 to 2 month intervals *

Persistent means two or more venous blood lead levels of 15-19 µg/dl drawn at least 3 months apart

***Until these three conditions are met:**

- 1) The BLL has remained <15 µg/dl for at least 6 months,
- 2) Lead hazards have been removed, and
- 3) There are no new exposures.

After these three conditions have been met:

-Children less than 36 months of age should continue to be tested every 3 months

-Children who are 36 months of age or older need no further follow-up testing

CDC GUIDELINES FOR CASE MANAGEMENT

If a venous blood lead level is 20 µg/dl or higher, OR if the child has persistent levels of 15-19 µg/dl, the child should receive clinical management. Reference: “*Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials*”, Centers for Disease Control and Prevention (1997)

Case management includes:

- **Clinical evaluation for medical and environmental history**
 - Suggested medical history topics:
 - Lead poisoning symptoms (Irritability, behavior problems, delayed development, lethargy)
 - Developmental history
 - History of pica
 - Previous blood lead testing results
 - Previous blood lead testing results of household members
 - Suggested environmental topics:
 - Age, condition, remodeling, or repainting of child’s primary residence and other places that the child spends a significant amount of time.
 - Occupational exposure of adults in contact with child
 - Hobby exposure of adults in contact with child
 - Suggested additional topics
 - Recent foreign travel
 - Receipt of foreign made items into child’s environment
 - Child’s iron and calcium levels
 - Child’s dietary fat intake
 - Family’s participation in WIC or food stamp programs
 - Use of non-traditional ‘medicines’
- **Family lead education and referrals**
 - Recommended topics
 - Potential adverse health effects of elevated blood lead
 - Sources of lead exposure
 - Importance of wet-cleaning to remove dust on floors and window sills,
 - Role of good nutrition
 - Need for and schedule of follow-up testing
- **Chelation therapy, if appropriate**
 - Chelation therapy is strongly recommended for any child with a blood lead level of 45 µg/dl or higher.
- **Follow-up testing at appropriate intervals (as detailed in previous section)**



CDC AND MEDICAID GUIDELINES FOR SCREENING

CDC recommended and Medicaid EPSTD required universal screening:

SCREEN ALL CHILDREN AT LEAST ONCE PRIOR TO 2 YEARS OF AGE

**AND CHILDREN 36-72 MONTHS OF AGE
WHO HAVE NOT BEEN PREVIOUSLY SCREENED**

Additional screening may be indicated when:

A CHILD'S LIKELIHOOD OF EXPOSURE HAS INCREASED

**A FAMILY'S BASIC PERSONAL-RISK QUESTIONNAIRE
INDICATES INCREASED POSSIBILITY OF LEAD EXPOSURE**

AN OLDER CHILD HAS EXCESSIVE MOUTHING BEHAVIOR

A CHILD OF ANY AGE WHO HAS BEEN ADOPTED FROM ABROAD

PREVENTATIVE EDUCATION FOR FAMILIES

Preventative education* should include:

- An explanation of the seriousness of lead exposure and of the possible permanent health consequences of elevated blood lead levels
- An explanation of sources of lead exposure and suggestions on how to reduce exposure
- The importance of using appropriate precautions when performing home renovation or repainting
- The importance of good nutrition

Preventative education * should be provided:

- To expectant mothers,
- To parents when children are 3-6 months of age
- To parents when children are 12 months of age
- To parents when children are 1 to 2 years of age
 - Include a basic personal-risk questionnaire (as below, or available at www.dphhs.mt.gov)

A basic personal-risk questionnaire should include:

- What is the age and condition of child's home and houses or buildings where child spends significant time? (day care or grandparents)
- Has renovation or repainting occurred in the child's home or in houses or buildings where child spends significant time?
- Have siblings or playmates been identified with elevated blood lead levels
- Is there a history of occupational, recreational, or hobby exposure to lead by other family members? (shooting, fishing, jewelry-making, stained-glass making, pottery glazing)
- Has the child lived or traveled outside of the United States?

Preventative education materials are available through the
Lead Poisoning Prevention Program

RESOURCES AND CONTACTS

MONTANA DEPARTMENT OF PUBLIC HEALTH AND HUMAN SERVICES

Montana Lead Poisoning Prevention Program
Janet Stetzer, RS, CLS, Coordinator
(406) 444-0695
jstetzer@mt.gov

Montana State Health Officer
Steven Helgersen, MD, MPH
(406) 444-1286
SHelgersen@mt.gov

Montana Environmental Health Section
Mary Simmons, MA, Supervisor
(406) 444-9777
msimmons@mt.gov

CENTERS FOR DISEASE CONTROL

<http://www.cdc.gov/nceh/lead/>

[Preventing Lead Poisoning in Young Children \(2005\)](http://www.cdc.gov/nceh/lead/publications/PrevLeadPoisoning.pdf)
<http://www.cdc.gov/nceh/lead/publications/PrevLeadPoisoning.pdf>

[Building Blocks for Primary Prevention: Protecting Children from Lead-Based Paint Hazards \(2005\) -](http://www.cdc.gov/nceh/lead/publications/Building_Blocks_for_Primary_Prevention.pdf)
http://www.cdc.gov/nceh/lead/publications/Building_Blocks_for_Primary_Prevention.pdf

[Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention \(2002\)](http://www.cdc.gov/nceh/lead/CaseManagement/caseManage_main.htm)
http://www.cdc.gov/nceh/lead/CaseManagement/caseManage_main.htm

[Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials, Centers for Disease Control and Prevention \(1997\)](http://www.cdc.gov/nceh/lead/guide/guide97.htm)
<http://www.cdc.gov/nceh/lead/guide/guide97.htm>